

Water Resources Department

725 Summer St NE, Suite A Salem, OR 97301 (503) 986-0900 Fax (503) 986-0904

January 5, 2016

Greg Oberndorf 26496 Deb Lane Parma, ID 83660

Re: Lonesome Lake Dam (L-15) – Inspection Summary

I inspected Lonesome Lake Dam on August 25, 2015, with Keith Mills, the State Engineer. The Water Resources Department conducts routine inspections of the dam's exterior surfaces to identify conditions that might affect the safety of the dam. Dams are assigned a hazard rating based on downstream hazard to people and property, not on the condition of the dam. Lonesome Lake Dam has a high hazard classification. High hazard dams are inspected annually.

Summary: The dam is fair condition. Due to excessive vegetative growth and accumulated debris restricting flow at the pipe inlet, the spillway continues to be the main concern at the dam. To prevent overtopping, which could lead to dam failure, the spillway must be maintained to flow at full capacity. We have observed no evidence of valve operation over about the last five years. Additionally, the valve outlet still appears to be completely covered with soil and debris. The low level conduit must be functional to lower the reservoir, as needed, for maintenance or an emergency.

Results of Inspection:



Dam upstream side, from right abutment. Note vegetation.

During the inspection, the reservoir was about 2 feet below the dam crest. Excessive vegetation along the shoreline hindered inspection of the dam's upstream side. Since the previous inspection, a screen was placed at the inlet to the spillway pipe, located on the upstream side of the dam near the right abutment. However, excessive vegetation and an accumulation of floating vegetation were observed on the screen. These conditions significantly restrict inflow to the spillway pipe. The spillway approach channel and inlet screen must be kept free of vegetative growth and debris.



Spillway pipe inlet. Note screen, vegetation, and debris.

The top end of the operator stem for the low level outlet conduit is located on the upstream side of the dam. We could not inspect the low level conduit outlet, because it is buried under loose fill under dense vegetation. Based on the condition of operator stem and soil and rock covering the outlet, it appeared that the low level outlet valve had not been operated recently. The low level conduit and valve must be maintained so it is able to lower the reservoir, as needed, for maintenance or an emergency.



Operator stem for low level outlet valve.



Dam crest viewed from left abutment.

No sign of settlement or cracking was observed on the dam crest. The dam crest is wide and clear of trees and brush to the shoulders. Past inspection reports state that vegetation was removed from the crest a few years ago. A few trees remain on the upstream shoulder. Excessive trees and brush were observed along the downstream toe.



Dam downstream slope and toe, crest in foreground.

In addition to hindering inspection and access, trees and woody vegetation can have roots that penetrate deep into the dam. When the vegetation dies, roots decay and leave seepage paths in the dam, especially if there are burrowing animals. Also, taller trees are prone to blowing over, which can also compromise the dam integrity.

Drawings for Water Rights

In addition to this routine inspection, we also received information for completion of the water rights process, including one drawing from Dave Shaw of ERO Resources, a consultant working for you. We will need the as-builts to include the actual dimensions of the dam itself, including crest width, slope steepness, and conduit and spillway dimensions, as described in Oregon Administrative Rule 690-020-0080(5). The engineer is not required to certify the parts of the dam that are unseen, but will need to observe that the conduit can be operated properly, and document this in the final letter along with asbuilt drawings. These must have the stamp of a Professional Engineer registered in Oregon.

Recommendations:

- 1. Clear vegetation and debris from the spillway approach channel and pipe inlet screen, as needed to maintain full flow capacity. If this action is not sufficient to maintain full flow capacity, it may be necessary to construct an intake structure with a trash rack.
- 2. Clear soil and debris from the low level conduit outlet. It may be possible to do this by opening the valve. If the valve has not been operated recently, we recommend that you open it in the fall, when your need for water is lower, in case it requires repairs.
- 3. Remove vegetation from the dam upstream side and downstream toe.
- 4. Have an engineer submit final documentation so the water right process can move forward.

We use a standard inspection form, and a copy of the field inspection sheet for this dam is attached. Another routine inspection is planned for next year. Please let me know if you have any questions about this inspection.

Sincerely,

Gerald Pierce, P.E.

Civil Engineer

(503) 986-0839

C: Ron Jacobs, Watermaster District 9

Dam Safety File L-15

Gerald a. Pierce



Dam Safety Inspection Form

State of Oregon Water Resources Department 725 Summer Street NE, Suite A Salem, Oregon 97301-1271 (503) 986-0900

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orage: 1	86ac. ft	. Permit:R-	12601 NID #: O	R- 03792			
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th Mill	s and G	erald Pierce	Watermaster Di	strict: 9			
5 Wea	ather: ho	t and sunny					
Date:7	/-1 -20 14	Issues fro	m prior inspectio	n: brush and tre	es, soil and deb	ris in conduit	
spectio	n Need	ed: Nex	at Inspection Date	: 2016			
						and dam safety	
⊠ Ea	arth	Rock	☐ Concrete	Other			Rating
bush a	ind a few	trees		·			3
Width, Surfacing, Vegetation, Trampling, Depression, Cracks, Breaching very wide, brush on shoulders					4		
brush	Vegetation, Animals, Erosion, Seepage, Leak (muddy), Bulge, Depression, Slide brush and trees					3	
Veget	Vegetation, Animals, Erosion, Seepage, Leak (muddy)					3	
Veget	Vegetation, Animals, Erosion, Seepage, Leak (muddy)					3	
_	Vegetation, Erosion, Seepage, Leak (muddy), Boil brush and trees					3-	
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(s) [☐ No	Yes [1 2 2 3	□ 4 □ 5	over 5		
(Observa	tion of dowr	nstream slope and	l toe hindered b	y excessive veg	etation	
	Pool 6	elevation: -2	2.0	Point of Refe	rence: crest		Rating
oard	Vertica	al distance de	bris from debris lir	ne to crest 1.5 ft.			3
/Trash	⊠ Cl	ean 🔲 A	Around reservoir	Near spill	way		4
	⊠ No	ot needed	Present Ne	eded 🗌 Deter	ioration 🔲 Inc	effective	
ions	⊠ No	one 🗌 Acti	ve Landslide	Wildfire in Wat	ershed 🗌 Oth	er (comments)	
	Excess	sive vegetatio	n along shoreline.				
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	rage: I Si th Mill S Wea Date: 7 spection 5 - S-Very r need Width very w Vegets brush Vegets brush Vegets brush ow I S () () () () () () () () () (orage: 186ac. ft Significant th Mills and General Significant the Mills and a few Width, Surfacionery wide, brush and trees Vegetation, And Vegetation, And Vegetation, Endough and trees ow Right Significant the Mills and General Significant the M	Significant High th Mills and Gerald Pierce Weather: hot and sunny Date:7-1-2014 Issues fro spection Needed: Nex S-Very good; 4-Adequate r needed; 1- Urgent dam s Earth Rock Vegetation, Animals, Erosic bush and a few trees Width, Surfacing, Vegetatio very wide, brush on shoulde Vegetation, Animals, Erosic brush and trees Vegetation, Animals, Erosic Vegetation, Erosion, Seepag brush and trees We Right gpm Cen s) No Yes Observation of down Pool elevation: -2 oard Vertical distance de Trash Clean Acti Excessive vegetation	orage: 186ac. ft. Permit:R-12601 NID #: Orage: 186ac. ft. Permit:R-12601 NID #: Orage: Significant High Request the Mills and Gerald Pierce Watermaster Discontinuous Potential Rock September Solution Potential Rock September Solution Potential Rock Concrete Vegetation Animals, Erosion, Wave Action, Double And a few trees Width, Surfacing, Vegetation, Trampling, Depvery wide, brush on shoulders Vegetation, Animals, Erosion, Seepage, Leak (brush and trees Vegetation, Animals, Erosion, Seepage, Leak (Vegetation, Animals, Erosion, Seepage, Leak (Vegetation, Animals, Erosion, Seepage, Leak (Vegetation, Erosion, Seepage, Leak (Vegetation, Erosion, Seepage, Leak (Muddy), brush and trees Weight Solution Seepage, Leak (Muddy), brush and trees Weight Seepage, Leak (Muddy), brush and trees	prage: 186ac. ft. Permit:R-12601 NID #: OR- 03792 Significant	prage: 186ac. ft. Permit:R-12601 NID #: OR-03792 Significant	prage: 186ac. ft. Permit:R-12601 NID #: OR-03792 Significant Request Inundation Analysis for change the Mills and Gerald Pierce Watermaster District: 9 Weather: hot and sunny

IV. Conduit Cont	trol: Manual Power Other Conduit Control missing	Rating			
Inlet	Submerged Debris on Trash Rack Deterioration				
Trickle tube	☐ None ☐ Screened ☐ Blockage ☐ Deterioration				
Control/Stem	Operable Damaged Missing no wheel				
Valve(s) cycling	☐ Frozen ☐ unknown ☐ past year ☐ frequent				
Size: buried	Material Condition				
Outlet Structure	Overgrown Clean Pressurized Leaking gpm				
Secondary outlet	Yes No Type Diameter in.				
Comments:	valve stem did not appear to have been operated recently				
V. Spillway	☐ Earth ☐ Rock ☐ Concrete ☐ Other	Rating			
Modifications	☐ None ☐ Reduction in capacity ☐ Feature not on design				
Approach Channel	☐ Clear ☐ Trees/brush ☐ debris ☐ erosion				
Control Section	Width Depth Concrete Rock Soil Culvert Unstable	:			
Flashboards/Gate	☐ None ☐ In place ☐ operational ☐ deteriorated				
Discharge Channel	☐ Clear ☐ Trees/brush ☐ leakage ☐ headcutting (feet approaching control section, depth feet.)				
Stilling basin					
Aux. Spillway	Yes No (use comments below)				
Comments:					
ACTION AND ADDRESS OF THE PARTY					
VI. Access and Secu	rity	Rating			
Vehicle access	☐ Public road ☐ all weather road ☐ dirt road ☐ cross country	3			
Fencing, signage	Remote Gate Secure Fence Camera Uncontrolled	3			
New Structure below	• • • • • • • • • • • • • • • • • • • •				
Emergency Action Pl	lan Not required Completed at dam (dated) None				
Comments:					
Instrumentation data Other:	reviewed: N/A Yes No				